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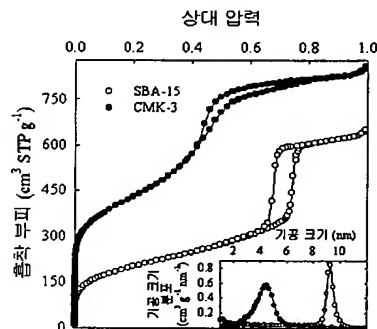
CARBON MOLECULAR SIEVE FOR HYDROGEN STORAGE AND PROCESS FOR PREPARING THE SAME

Representative drawing

(57) Abstract:

PURPOSE: Provided are a carbon molecular sieve for hydrogen storage and a process for preparing the same by forming uniform sized carbon nanoline or carbon nanotube on the inside of pores of silica mesoporous molecular sieve.

CONSTITUTION: The method includes the steps of adsorbing (i) a carbohydrate solution and acid or (ii) carbon polymer precursor inside pores of silica mesoporous molecular sieve, followed by drying and polymerization; heating the silica mesoporous molecular sieve at 400 to 1400 deg.C in vacuum atmosphere to pyrolyzing captured materials in pores; and reacting the heated silica mesoporous molecular sieve with fluoric acid or sodium hydroxide solution to remove template part. The method is characterized in that the silica mesoporous molecular sieve is SBA-15 or SBA-3; the carbohydrate is sucrose, xylose or glucose; the acid is sulfuric



acid, hydrochloric acid, nitric acid, sulfonic acid or their derivatives; the carbon polymer precursor is furfuryl alcohol, aniline, acetylene or propylene.

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